ABSTRAK

ULFY RAHMADANI. Pengembangan Perangkat Pembelajaran Berbasis Model Pembelajaran *Think Pair Share* untuk Meningkatkan Kemampuan Metakognisi dan Komunikasi Matematis Siswa SMP Negeri 4 Panyabungan. Tesis. Medan: Program Studi Pendidikan Matematika Pascasarjana Universitas Negeri Medan. 2023.

Penelitian ini bertujuan untuk mendeskripsikan: validitas, kepraktisan dan efektifitas perangkat pembelajaran berbasis model pembelajaran *Think Pair Share*, peningkatan kemampuan metakognisi matematis dan kemampuan komunikasi matematis siswa dengan menggunakan perangkat pembelajaran yang dikembangkan dan proses jawaban siswa dalam menyelesaikan soal-soal kemampuan metakognisi dan komunikasi matematis. Penelitian ini merupakan penelitian pengembangan dengan model pengembangan 4-D. Instrumen penelitian ini adalah lembar validasi dan observasi, Buku Siswa, Tes Metakognisi Matematis dan Tes Komunikasi Matematis. Uji coba I dilakukan pada siswa kelas VIIIA dan uji coba II di kelas VIII-B SMP Negeri 4 Panyabungan. Dari hasil penelitian ini diperoleh bahwa: (1) Validitas Perangkat pembelajaran *Think Pair Share* meliputi BS, LKPD, TKMM, TKKM yang dikembangkan termasuk dalam kategori valid; (2) Kepraktisan Perangkat pembelajaran berbasis *Think Pair Share* yang dikembangkan diperoleh bahwa: perangkat dapat dipergunakan dengan sedikit revisi dan hasil pengamatan keterlaksanaan perangkat pembelajaran di kelas diperoleh rata-rata nilai praktis, reliabilitas instrument perangkat baik; (3) Keefektifan Perangkat pembelajaran berbasis *Think Pair Share* yang dikembangkan menunjukkan ketuntasan klasikal *pre-test* siswa pada uji coba I sebesar 16,67% dan *post-test* 79,17%. Sedangkan *pre-test* siswa pada uji coba II sebesar 20,83% dan *post-test* 87,50%, lebih dari 80% siswa memberikan respon positif terhadap perangkat pembelajaran yang dikembangkan dan lebih dari 85% setiap komponen keterlibatan siswa menunjukkan siswa aktif dalam pembelajaran; (4) Kemampuan metakognisi dan komunikasi matematis siswa menggunakan perangkat pembelajaran berbasis *Think Pair Share* yang dikembangkan meningkat dengan skor N-gain 0,54 untuk kemampuan metakognisi matematis dan 0,52 untuk kemampuan komunikasi matematis.

Kata kunci: Pengembangan Perangkat Pembelajaran, Model 4-D, Pembelajaran *Think Pair Share*, Kemampuan Metakognisi Matematis, Kemampuan Komunikasi Matematis.

ABSTRACT

ULFY RAHMADANI. Development of Learning Devices Based *Think Pair Share* Approaches to Improve Metacognition and Comunication of Students Mathematichal at SMP Negeri 4 Panyabungan.Thesis. Medan: Postgraduate Mathematics Education Study Program, State University of Medan. 2023.

This study aims to describe: the validity, practicality and effectiveness of learning tools based on the Think Pair Share approach, improving mathematical metacognition and students' mathematical comunication using developed learning tools and the student's answer process in solving problem-solving skills questions. This research is a development research with a 4-D model. The research instruments are validation and observation sheets, student books, problem-solving ability test and Mathematical Disposition Questionnaires. The first trial was conducted on students of class VIII-A and the second trial was in class VIII-B of SMP Gajah Mada Medan. The results of this study are: (1) The validity of Contextual Teaching and Learning learning tools included included Student's book, Student's Worksheet, problem solving ability test, The developed Mathematical Disposition Questionnaire has fullfil in the valid category; (2) Practicality of learning tools based on Contextual Teaching and Learning that was developed, it was found that: the device could be used with a few revisions and the results of observing the implementation of learning tools in the classroom obtained an average practical value, the reliability of the instrument was good; (3) The effectiveness of the learning tools based on Contextual Teaching and Learning that the students' classical pretest mastery in the first trial was 16.67% and the post-test was 79.17%. While the pre-test of students in the second trial was 20.83% and post-test was 87.50%, more than 80% of students gave a positive response to the learning tools developed and more than 85% of student are actively engage in learning; (4) The problem solving ability and mathematical disposition of students taught by using learning tools which is developed based on Contextual Teaching and Learning was improved with N-gain score 0,52 for problem solving ability and 0,54 for mathematical disposition.

Keywords: Development of learning tools, 4-D models, Think Pair Share Approaches, Mathematical Metacognition, Mathematical Comunication.